

Maturity Paper - Work Journal

17.05.2025

I found some studies, which I could refer to in my research. Both are from APA and are discussing the question, whether video games lead to more violence or not:

Violence in the media: Psychologists study potential harmful effects
<https://www.apa.org/topics/video-games/violence-harmful-effects>

Virtual violence
<https://www.apa.org/monitor/2010/12/virtual-violence>

27.05.2025

I found a website of a community which «relives» Half Life 2 with the help of RTX Remix.
<https://www.hl2rtx.com/>

They call themselves Orbifod Studios and have an X-account on which they upload news.
<https://x.com/hl2rtxofficial>

Theory of how RTX Remix could possibly work:

When RTX Remix is utilized to make a game use high-poly models instead of low-quality ones, it captures a scene of a game where you later manually replace everything you want to be different. The question is though, how does the game support high-poly models? NVIDIA wrote that it works only on PCs which have a graphic card of the RTX series. Additionally to that the game will start with new models only if you start it through RTX remix. Out of these facts I come up with the following theory: RTX Remix uses an other engine than the game itself which makes it possible to utilize textures and models of modern quality. It would also explain why it only works on RTX graphic cards. Probably the engine of RTX remix supports only NVIDIA RTX graphic cards.

<https://www.nvidia.com/en-us/geforce/rtx-remix/>

01.07.2025

Thinking outside the murder box': virtual violence and pro-social action in video games

Social Media and Mental Health
Cambridge medicine (Series)

Handbook of Social Media Use Online Relationships, Security, Privacy, and Society. Volume 2 /.

Learning Outcomes and Educational Effectiveness of Social Media as a Continuing Professional Development Intervention for Practicing Surgeons: A Systematic Review and Narrative Synthesis

Computer games and new media cultures: a handbook of digital games studies

03.07.2025

Too human and not human enough: A grounded theory analysis of mental health harms from emotional dependence on the social chatbot Replika

Exploring the Impact of Anthropomorphism in Role-Playing AI Chatbots on Media Dependency: A Case Study of Xuanhe AI
<https://arxiv.org/abs/2411.17157>

LLM Roleplay: Simulating Human-Chatbot Interaction
<https://arxiv.org/abs/2407.03974>

Future Research Avenues for Artificial Intelligence in Digital Gaming: An Exploratory Report
<https://arxiv.org/abs/2412.14085>

03.08.2025

Starting creating a detailed plan of the work/work structure (with introduction, different chapters and subchapter)

05.08.2025

Reviewing what's written until now, correcting it and adding new chapters.

07.08.2025

Found another NVIDIA's AI project. It's called NVIDIA ACE which' goal is to add a new layer of realism to the game. (Not only graphics)

<https://developer.nvidia.com/ace-for-games> -----> integration of AI in games

short description of an AI model used in NVIDIA ACE called Whisper ASR:

Whisper ASR is a speech recognition model and was trained on 680,000 hours of labeled (tagged with the correct information) data. It is based on Open AI's Whisper but was optimized for a better performance and easy-to-download and easy-to-implement use.

09.08.2025

Finished the first version of contextual background. (Not the best yet)

What still needs to be done: Reviewing contextual background, correcting it, adding E-sports and Influencers, creating a plan of Analysis.

10.08.2025

added E-sports and Influencers to contextual background

12.08.2025

Reviewed contextual background and corrected it.

13.08.2025

Started with analysis, tried to come up with interesting questions

14.08.2025

Continued working on analysis

16.08.2025

Finished with Analysis, reviewed it. Probably needs more enhancement (Until now all the sections were created only for the Work Structure)

13.09.2025

Found definition of AI in a paper which took it from the book “Artificial Intelligence A Modern Approach” by Stuart J. Russell and Peter Norvig

https://repository.ukim.mk/bitstream/20.500.12188/8188/1/CIIT2020_paper_30.pdf

Authors: Filemon Jankuloski, Adrijan Božinovski, Veno Pachovski

School of Computer Science and Information Technology

University American College Skopje

Last access time: 13.09.2025 11:33

Book itself can be found in the ETH library

https://eth.swisscovery.slsp.ch/discovery/fulldisplay?docid=alma99117202440705503&context=L&vid=41SLSP_ETH:ETH&lang=de&search_scope=DiscoveryNetwork&adaptor=Local%20Search%20Engine&tab=discovery_network&query=any,contains,Artificial%20Intelligence:%20A%20Mode rn%20Approach&sortby=date_d&facet=frbrgroupid,include,9048942315969388878&offset=0

According to the paper, one of the definitions is the following: Artificial Intelligence is a machine/system/program which aims to mimic/simulate human intelligence as closely as possible.

In the EU AI Act, there's written other definition of AI.

<https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng>

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202401689 (page 46)

Article 3, paragraph 1

“ ‘AI system’ means a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments;”

Splitting up to understand better:

machine-based system => not a biological or organic entity. Product of engineering and software.

varying levels of autonomy => can be both: fully controlled by a person (a doctor if used in medicine) or complete tasks by itself (self-driving car)

may exhibit adaptiveness after deployment => can learn and change its behavior based on new data it encounters after it has been launched.

explicit or implicit objectives => explicit: defined goal by the developer; implicit: goals it might learn from the data and its environment

infers, from the input it receives, how to generate outputs => the system using patterns it has learned to reason and produce a result it wasn't explicitly told how to produce. It's making an educated "guess" based on its training.

According to this definition AI in old/classic games like Skyrim is not AI.

Reasons:

1. Does **not** have varying levels of autonomy
2. Can **not** learn and change its behavior based on new data

Riva/Magpie TTS (Text to Speech) Preview:

<https://build.nvidia.com/nvidia/magpie-tts-flow>

Finished writing approximately 5 pages (from chapter 1 to chapter 2.1.1.1.3)

14.09.2025

Reread what I wrote, corrected sentences and language in general, to make it sound better.

<https://www.scribbr.com/category/research-paper/>

<https://www.scribbr.com/academic-writing/transition-words/>

<https://www.scribbr.com/academic-writing/taboo-words/>

The links above helped me writing the paper in an academic and formal way.

15.09.2025

Reread again what I wrote and corrected sentences before uploading

18.09.2025

Searched a bit more about Riva TTS. Found <https://docs.nvidia.com/deeplearning/riva/user-guide/docs/tts/tts-overview.html>

<https://www.nvidia.com/en-us/ai-data-science/products/riva/>

27.09.2025

Found a paper by NVIDIA about their Audio2Face project “Audio2Face-3D: Audio-driven Realistic Facial Animation For Digital Avatars”

<https://arxiv.org/pdf/2508.16401>

2 different networks:

While both were trained on the same dataset, they work differently. One generates facial movement based on small audio chunks (0.52 seconds) without depending on the previous or next facial state. It generates one frame animation in the end

The other one (diffusion based) generates based on 1-second audio chunks a 30-frame animation. While 30 frame animations have a higher quality, they use much more memory up.

06.10.2025

Edited all written chapters based on the feedback received. Added some information to Riva TTS. Wrote the Audio2Face-3D subchapter. Started with the Visual AI section. Got “Artificial Intelligence A Modern Approach” by Stuart J. Russell and Peter Norvig from the ETH library and corrected one reference.

07.10.2025

Wrote a subchapter about Nvidia RTX Remix. Finding enough information about how it works was difficult, but I managed to do it. Many webpages are written about how to use it, which is not the same as how it works.

I found 2 demos of the ai-texture generation which is available in RTX Remix. It could be used at the presentation to show an example of how it works.

08.10.2025

Edited Nvidia RTX Remix chapter and added some information.

09.10.2025

Started the Environmental Generation AI chapter. NVIDIA Blueprints - 3D Object Generation workflow is prominent example of such AI tools. Initially I thought of writing about NVIDIA GANverse 3D / NVIDIA GauGAN, but I noticed that it does not fit the topic well enough. I found an article on NVIDIA about an AI tool which generates a scene based on the description of the user, but I noticed that the tool is not available anymore. After some research, I found a good alternative: NVIDIA Blueprints - 3D Object Generation workflow.

10.10.2025

Edited Environmental Generation AI chapter and started writing about Gaming and Its Social-Communicative Ecosystem, which includes online platforms, esports, influencers, and online identity and representation. I wrote about Discord, Twitch and the predecessor of Twitch – Justin.tv. Assuming that some people might not know what Big Brother-style reality show refers to, I wrote about its origins from the novel Nineteen Eighty-four (1949) by George Orwell.

11.10.2025

Continued working on the same chapter as the previous day. I wrote about esports and brought some games used for esports as examples.

12.10.2025

Searched about influencers and started writing about them. I brought an example of an influencer, who is a professional player.

13.10.2025

Finished writing about influencers and wrote about online identity and representation. Searched information for the second main chapter – the analysis.

14.10.2025

Started writing the analysis. For cooperative play across cultures, I decided to bring up two aspects: general communication between people from different cultures and communication of players in esports. Both studies that I used to write about those topics suggest that misunderstandings can be eased. In my opinion though it is not very convincing due to known historical and cultural tensions which exist over longer time.

15.10.2025

Edited the cooperative play across cultures chapter. Rewrote some paragraphs to sound better. Started writing about esports and its influence on game popularity and community growth. To show the change of game popularity, I thought it would be a good idea to bring up the game and in-game purchases as a topic.

16.10.2025

Edited the chapter about esports and its influence. Rephrased some paragraphs, added new content and checked if everything sounds logical. Started and finished writing a section about influencers. Started writing about the impact of violent games on aggression. The topic about violent games is not so often discussed; it was difficult finding sources. In the subchapter about violent games, I wrote two points of view: one suggesting that it increases aggression and the other that it lets players let out steam. To exemplify the insufficiency of violent games for high aggression increase a hypothetical case of violent games leading to the decision of a player to carry out a school shooting is discussed.

17.10.2025

Had difficulties writing about moral dissonance through realism-increase due to insufficiency of studies covering this topic in connection with AI. I found a study about the same topic but in connection with Virtual Reality so I decided to say with its help that if such technologies already increase empathy, NVIDIA's AI systems (mentioned in contextual background) will do it as well.

18.10.2025

Reread all previous chapters and edited some. Wrote about AI companions and Self-Reflection. A German article out of the c't magazine helped finding useful information to the topic. Almost finished the chapter.

19.10.2025

Finished the last chapter of Analysis. Reread the first 5 pages, rephrased and worked on the language. The whole text needs to be reread, checked if everything is right, corrected where needed and rephrased to sound better. Additionally, I need to write a Discussion, a Conclusion and a Glossary, and add illustrations fitting the topics.

24.10.2025

Finished refining 5 pages of Analysis.

26.10.2025

I reread the 5 pages of Analysis I have refined on 24.10.2025, corrected last mistakes and sent the pages to my first supervisor.

Important note: Until November the 9th I have to finish correcting and rewriting 5 pages (highly likely of Analysis) so they would be good enough for the final upload. I'll send them to the English immersion assistant, so he gives me feedback. It will help me to understand how I should change the language in details.

08.11.2025

Finished reworking the 5 pages

09.11.2025

Reviewed the 5 pages and sent them to the English immersion assistant

11.11.2025

Received feedback from the English immersion assistant. Took a look at his corrections and comments. Started refining the whole work based on his feedback.

15.11.2025

Started making a glossary section. Still reviewing the work and polishing it.

17.11.2025

Finished polishing the whole text, finished the glossary. Started creating illustrations for the work.

22.11.2025

Finished creating all illustrations. Imported them into the document. Added the title page and a bibliography. Reviewed the whole document. Checked if the style is right. Corrected the place of some references.

24.11.2025

Printed 3 times on high-definition paper with best printer settings at home.

25.11.2025

Made holes and bound each exemplary of my maturity paper.